

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Operator: Continental Resources, Inc.

Well Name/Number: Hazel 2-18H

Location: NW NW Section 18 T23N R54E

County: Richland, **MT; Field (or Wildcat)** W/C (Bakken Horizontal)

Air Quality

(possible concerns)

Long drilling time: No, 50 to 60 days drilling time.

Unusually deep drilling (high horsepower rig): No, single lateral 14,360' MD/9,666'TVD

Possible H2S gas production: Slight

In/near Class I air quality area: No

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: No special concerns – using triple rig to drill single lateral

Water Quality

(possible concerns)

Salt/oil based mud: Yes, freshwater and freshwater mud system on surface hole and oil based mud system on the mainhole and saltwater for horizontal laterals.

High water table: No

Surface drainage leads to live water: No, nearest drainage is an unnamed ephemeral tributary to East Redwater Creek, about 1/4 of a mile to the south of this location.

Water well contamination: None, all water wells are shallow, 200' or less in depth and about at least 1/2 of a mile away. Surface hole will be drilled with freshwater muds.

Surface casing will be set at 1610' and cemented to surface.

Porous/permeable soils: No, sandy bentonitic soils

Class I stream drainage: No

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: _____

Comments: 1610' of surface casing is enough to cover the base of the Fox Hills and be cemented to surface adequate to protect all freshwater zones.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None

High erosion potential: No, moderate cut, up to 18.2' and fill, up to 15.9', required.

Loss of soil productivity: No, location will be restored after drilling if unproductive. If productive, unused portion of this drilling location will be restored.

Unusually large wellsite: No, 400'X450' location size required.

Damage to improvements: Slight

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other _____

Comments: Access will be over existing county road, #319. About 4298' of new access road will be built into this location off the existing county road. Cuttings will be buried in the lined reserve pit. Oil based drilling fluids will be recycled. Completion fluids will be hauled to a commercial Class II disposal. Pit will be allowed to dry and then closed by filling in with clay subsoils. No special concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences buildings almost a mile to south of this location.

Possibility of H2S: Slight

Size of rig/length of drilling time: Triple drilling rig/short 50 to 60 days drilling time

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☒ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: No concerns

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: No

Mitigation:

☐ Avoidance (topographic tolerance/exception)

☐ Other agency review (DFWP, federal agencies, DSL)

☐ Screening/fencing of pits, drillsite

☐ Other: _____

Comments: No concerns. Private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites None identified

Mitigation

☐ avoidance (topographic tolerance, location exception)

☐ other agency review (SHPO, DSL, federal agencies)

☐ Other: _____

Comments: On private lands. No concerns.

Social/Economic

(possible concerns)

☐ Substantial effect on tax base

☐ Create demand for new governmental services

☐ Population increase or relocation

Comments: No concerns

Remarks or Special Concerns for this site

Single lateral Bakken horizontal well. No special concerns.

Summary: Evaluation of Impacts and Cumulative effects

No significant long term impacts expected, some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): Thomas Richmond _____

(title:) Administrator

Date: December 20, 2013

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)

Water wells in Richland County

(subject discussed)

December 20, 2013

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____